

What is claimed is:

1. A multiple layer food manufacturing apparatus comprising:

a combining nozzle including an inner tube, an outer tube enclosing the inner tube, and an outer sleeve enclosing an outer periphery of the outer tube; thereby, the combining nozzle having an annular middle layer channel and an annular outer layer channel; a rotary screwing rod inserting through an inner channel within the inner tube; an inner layer food material passing through an inner layer channel in the inner tube and then being outputted from a lower output of the inner layer channel; the middle layer channel having a transversal inlet and an outlet; a middle layer food material being fed into the middle layer channel from the transversal inlet and being outputted from a lower outlet of the middle layer channel;

the outer layer channel having a longitudinal outlet; an outer layer food material entering into the outer layer channel; a side wall of the outer layer channel having a rotatable annular tapered ring for assisting the movement of the outer layer food material so that the outer layer food material is outputted from an outlet at a lower end of the outer layer channel; thereby, the inner layer, middle layer, and outer layer food materials being output; and the middle layer food material enclosing the inner layer food material, and the outer layer food material enclosing the middle layer food material so as to form a cylindrical food;

a right feeding device comprising a right collector for receiving the outer layer food material; the collector having at least one propeller, and an outlet which is communicated to and connected to the inlet of the outer layer channel; the at least one propeller serving to feed the outer layer food material longitudinally to the outlet of the right feeding device and then guide the outer layer food material to the outer layer channel;

a left feeding device comprising a left collector; the left collector

having at least one rotary propeller; and an outlet which is communicated to the transversal inlet of the middle layer channel; at least one propeller serving to feed middle layer food material longitudinally to the outlet of the left feeding device and then guide the middle layer food material to the middle layer channel; and

a cutter including a plurality of rotary knives; each knife having a cutting portion at a front end thereof; the movement of the knives will close or open a central opening; the cylindrical food being outputted from the combining nozzle and passing through the central opening longitudinally to be cut by the cutting portions so as to be formed as a ball-like food.

2. The multiple layer food manufacturing apparatus as claimed in claim 1, wherein a transferring device is installed below the cutter; the transferring device has a transferring belt; the transferring belt has a horizontal section which can be risen or restored; when a suspending transferring belt is lifted, it serves for receiving the tail of the ball-like food; when it descends, the moving forward transferring belt serves to output the ball-like food.

3. The multiple layer food manufacturing apparatus as claimed in claim 1, wherein each of the right and left collector has a rotary upper roller; a roller surface of each upper roller has a plurality of axial recesses and a plurality of annular recesses, and a plurality of protruding plates; each of two ends of each protruding plate is installed with rings which are received into the annular recesses; adjacent rings are alternatively arranged; the protruding plates are received in the transversal recesses;

a driving shaft passes through an axial hole of the upper rollers and passes through the through holes of the rings, respectively;

wherein an inner wall of each collector below the roller surface is protruded with a projection; when the protruding plates rotate to the lower extreme point, they are ejected by the projection to be reduced

into the transversal recesses of the roller surface.

4. The multiple layer food manufacturing apparatus as claimed in claim 1, wherein there are at least two right propellers and at least two left propellers; the right propellers are spaced by a spacer and the left propellers are spaced by the spacer; each propeller has a respective U groove; each U groove is inclined towards the outlet, so as to form a level difference so that the middle layer food material and outer layer food material are guided easily.

5. The multiple layer food manufacturing apparatus as claimed in claim 1, wherein an interior of the multiple layer food manufacturing apparatus is installed with a power output shaft; the bush is installed on the power output shaft; a cambered trench is formed on the bush;

a sliding sleeve is slidably connected to the cambered groove by a small pulley; and

a lever has one end which is movably connected to the sliding sleeve and another end thereof is connected to a connecting body below a top plate; the sliding sleeve is slidably along a surface of the bush; thereby, the lever is rotatable around a fixing shaft in the multiple layer food manufacturing apparatus to swing so as to lift or descend the top plate so that the transferring belt attached to the top plate rises or descended synchronously so as to receive the ball-like food and output the ball-like food.

6. The multiple layer food manufacturing apparatus as claimed in claim 1, wherein a periphery of the tapered ring is connected to the teeth; a lateral side of the outer sleeve are installed with driven gear which serves to drive the teeth to drive the tapered ring to rotate.

7. The multiple layer food manufacturing apparatus as claimed in claim 1, wherein the lower outlet of the inner layer channel is at an interior of the combining nozzle; the lower outlet has a diameter smaller than the outlet of the middle layer channel; the outlet of the middle layer channel is positioned slightly below the outlet of the inner

layer channel and has a diameter smaller than the outlet of the outer layer channel the outlet of the outer layer channel is below the outlet of the middle layer channel; the outlets of the inner layer channel, middle layer channel, and outer layer channel are coaxial.

8. The multiple layer food manufacturing apparatus as claimed in claim 1, wherein a funnel is connected above the inner tube for receiving the inner layer food material.

9. The multiple layer food manufacturing apparatus as claimed in claim 1, wherein an L shape arm is installed above the combining nozzle; a rear side of the arm is movably connected to a standing inner sleeve by a standing outer sleeve; the arm is swivable around the inner sleeve.

10. The multiple layer food manufacturing apparatus as claimed in claim 1, wherein an outer wall of the lower outlet of the outer layer channel is formed as a tapered body;

a supporting seat serves to support a lateral side of the tapered body and is screwed to the outer sleeve; an outer periphery of the supporting seat is installed with a handle,

11. The multiple layer food manufacturing apparatus as claimed in claim 10, wherein an outer surface of the middle tube is a cambered surface.